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ABSTRACT

This manual addresses the future workplace for persons with disabilities and the implications for rehabilitation. It presents information on trends and forecasts regarding work in the future, to stimulate thought and provoke action to meet the challenge presented by the future workplace. In an introductory section, the workplace of the future is projected, noting the pace of change, labor market trends, and resulting challenges to vocational rehabilitation programs. Unit Two reviews trends and potential future characteristics of work in America, specifically examining characteristics of the U.S. population, economic developments and technology, and social and political trends. Unit Three addresses the types of jobs that will offer employment opportunities for persons with disabilities in the future and identifies the skills that will be required to perform tasks required in those jobs. Unit Four discusses resources, opportunities, and relationships that will offer increased benefits to persons with disabilities in the vocational arena. Unit Five discusses how changing requirements of the workplace are likely to affect persons with disabilities, considers the impact on preparing disabled individuals for work in the future, and develops awareness of the importance of establishing integral working relationships with the private sector. Unit Six contains 17 recommendations to strengthen the state-federal rehabilitation program of the future. (55 references) (JDD)

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Fourteenth Institute on Rehabilitation Issues

# The Future Workplace

## Implications for Rehabilitation

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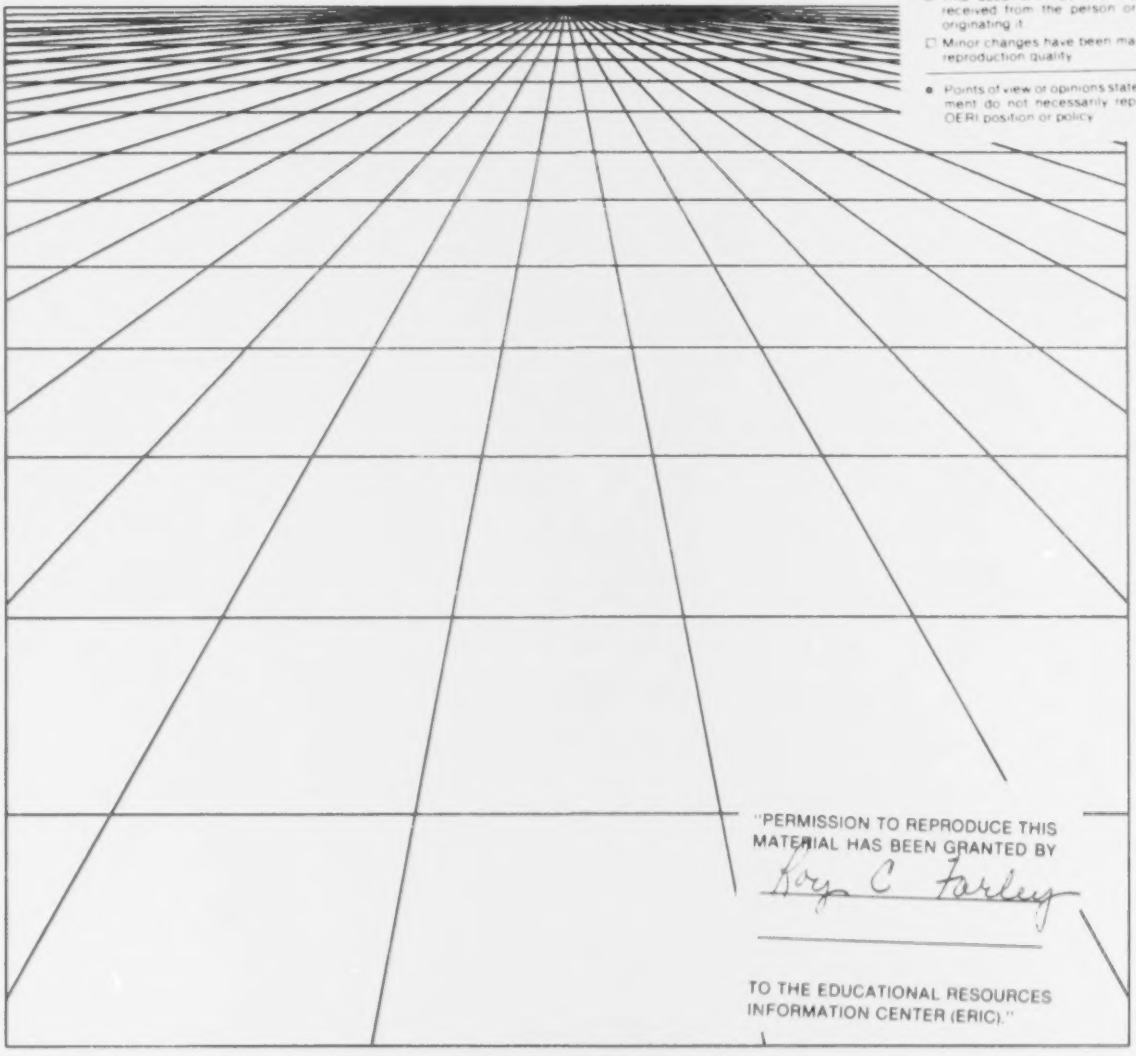

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Report from the Study Group on

# THE FUTURE WORKPLACE: IMPLICATIONS FOR REHABILITATION

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## Foreword

In a little more than a decade, we will enter the world of the 21st century. Without doubt, the world of the future will indeed be quite different than the one we know today. Although the changes that will take place cannot be described accurately or in detail, current events and emerging trends provide us with some definite indications of what this world of tomorrow will be like, especially future workplaces.

It is evident that most work and most worksites in the 21st century will be vastly different from those in existence today. In fact, many futurists predict that a very large number of present jobs will be obsolete and unemployment will be insignificant while information and service industries will be primary employers. Among other major changes, employees will be better educated and trained, much work will be done from the home, workers will have voice in management and major growth areas will continue to be in the sunbelt. Nevertheless, despite all the promises of a great future, there will be difficulty.

The future for rehabilitation will also see many changes including populations served, length of services, types of training, kinds of jobs, roles of facilities and employers, among others. Many professionals will be highly trained in such areas as rehabilitation engineering, robotics, telecommunications, computers and many other areas of high/low technology. The future will demand closer working relationships between agencies/organizations, between the federal/state and local programs. As a result of change, many problems will be solved but change in itself will create new problems. It will be a time of challenge, and the time to prepare to meet this challenge is now. The future will belong to those who prepare now and, if past performance is any measure of success, rehabilitation will be among the leaders.

With the future seemingly offering greater opportunities for employment of people, especially for those who are disabled, it is understandable that the Rehabilitation Services Administration (RSA), Council of State Administrators in Vocational Rehabilitation (CSAVR), National Institute on Disability and Rehabilitation Research (NIDRR), Research and Training Centers in Vocational Rehabilitation, and other related disciplines would suggest "The Future Workplace"

as a priority topic for study by the National Institute on Rehabilitation Issues (IRI).

The National IRI Planning Committee, after a review of many topic suggestions, selected "The Future Workplace" as a major area for study and provided the following charges to the Prime Study Group.

1. To develop a resource/training document that addresses the future workplace for persons with disabilities and the implication these trends have for rehabilitation.

2. To present information on trends, forecasts, and implications regarding work in the future which will stimulate thought and provoke action by rehabilitation administrators, middle management and other professionals to meet the challenge that will be presented by the future workplace.

The materials that follow in this manual are an intensive effort by the IRI Prime Study Group to meet these charges and, hopefully, the expectations of all rehabilitation agencies and organizations. Many implications are identified and discussed in terms of their impact on future rehabilitation programs and services. From the evidence available it is certain that rehabilitation agencies will be different in the future as will be the private sector. It is the intent of this study group to provide guidelines that will help rehabilitation agencies meet these challenges and be prepared as the future unfolds.

William "Doc" Williams
B. Douglas Rice

Unit One

A Perspective on the Future Workplace

## *Introduction*

This brief statement provides a hint of things to come in the document and alerts the reader to the perspective offered here. An effort has been made to maintain a realistic, yet open, view of what the future might hold for workers with disabilities.

The future workplace will indeed be different. There are many good signs that people with disabilities may be able to participate in work to a greater extent than ever before in our history. Also, the potential to work in jobs that are characterized by better wages, greater and more meaningful challenges, and continued career development appears to be a probability, not just a possibility. A few of the factors to be considered are described in the perspective that follows.

### *The Pace of Change*

Mankind's ability to create and adapt to change within the environment is almost beyond comprehension. One can look back over the past fifty years at accomplishments so immense they were once viewed as beyond human capabilities: sleek aircraft transport passengers around the world at supersonic speed; man's footprints

are on the moon; and telescopic cameras in space now provide scenes from universes heretofore unknown.

The world of yesterday included many unexplored frontiers--our own continent, the oceans, and the outer limits of space. Today, nearly every corner of this planet has been explored with constant new knowledge gained about space, the oceans, the frigid Arctic wastelands, medicine, and technology of all kinds.

Our world is vastly different from a century or even a decade ago. Until recently, the earth was seen by most people as immense in size, but today is looked upon as small, yet complex in its nature and composition. Nations that were once leaders in agriculture, industry or finance face competition from formerly obscure countries that are now emerging powers in automobile, shipbuilding, steel and computer industries. With these changes, national markets are giving way to global markets. The nations of the world are becoming more interdependent and none of the transitions we experience are more dramatic than changes in the workplace.

Norwood (1986) stated that the *central issue of today's labor market is adjustment to technology and the restructuring of industry.* In addition, changes are taking place in labor management and compensation practices. These changes raise many questions about the future of work in America. Whatever changes may occur, it is certain they will take place much faster than in the past. The last fifty years has witnessed our entrance into the atomic, space and computer ages; and as Norwood (1986) pointed out, during that time over 80 new nations have emerged, the world's population doubled, and the United States has shifted from an industrial to an information and services economy. Given the rapid pace of change it is not difficult to picture a future similar to the one described in the following scenario.

### *A Futuristic Projection*

Imagine yourself high on a catwalk in a large industrial complex looking down at intense activity below. You see row upon row of human-like robots executing complex tasks in long assembly lines. Only one person occupies an office with numerous computers and other machines. That person seems to be talking to the machinery as though giving instructions to people. In the corner, you notice a room with several people watching many tiny lights on a control

board that is apparently a detailed diagram of the complex. People move swiftly to new locations whenever a light comes on, seemingly to repair malfunctions in the robots working on the lines.

As you exit the building through giant electronically-controlled doors and enter the parking lot, you immediately note the absence of cars. Quickly following your exit a small hover craft arrives, opens its doors and you enter. As you whisk by the loading docks, you note crates from other such vehicles being unloaded by machines for movement into the factory. There seems to be an endless stream of vehicles leaving with finished goods or arriving with raw materials--all in a precisely timed operation.

Your next stop is at another large complex where two people board. You wonder how the hover craft knew to stop for you and again for the two passengers. No driver is aboard and all you see is an electronic board in front. You realize that the controls are operated from some central location.

The craft moves on to an enormous electronics training site. Hundreds of people are being trained for jobs in technology--services, telecommunications, computer manufacturing, repair or operations, and other vocations unknown today.

After viewing the technology training programs, you move to a large residential setting, much like condominiums of today except for the huge scale of the complex. You enter a living unit and observe a couple at work on their personal computers linked to main terminals in their businesses. They tell you that almost everyone in the complex works at home except those engaged in service occupations.

Your next stop is to visit a public school. You realize when entering the corridors of this large facility, that all children in the area must attend this one school. Computers of varous configurations seem to be doing most of the instruction in a most efficient manner. The school is only a sample of the experiences in store as you visit medical centers, food production and distribution operations, military training facilities, and other living complexes operated through a variety of technological devices.

### *Some Labor Market Trends*

Even though this projection may only remotely describe the realities of the world of the future, this advanced technological state will also involve many of the practicalities of living that we encounter today. As Senator Robert Dole (1986) stated, "We cannot project its arrival by taking a quantum jump; we have to meet it head-on in the plodding realities of the nine-to-five day. This includes painstaking planning." (p. vii) Naisbitt (1982) reported that no one can predict the shape of the new world, and that the most reliable way to anticipate the future is by understanding the present. What are some of the significant trends in labor markets and the economy that will have an impact on workers with disabilities and the rehabilitation programs that serve them?

1. With the industrial society moving more and more to information and service employment, a basic concern has become the realization of human potential.

2. Corporations are increasingly dependent on employees with intellectual and interpersonal skills rather than physical strength and endurance.

3. More small businesses are being formed and ever increasing numbers of entrepreneurs are found in the information, electronics, and service sectors.

4. Flexibility at the worksite is required as technology becomes more diverse.

5. With the passage of the "baby boomers", labor market demand will increase.

6. More people will be able to work in the home, especially in technology fields.

7. Many of the better jobs of the future will require even more advanced education than is now required.

These are but a few of the trends affecting the workplace. Vocational rehabilitation programs will have to examine these trends to determine their impact on program development.

### *The Challenges to Vocational Rehabilitation Programs*

With the tehnological explosion and the new emphasis on skilled personnel, vocational rehabilitation (VR) will be challenged to develop and modify programs to coincide with these and other changes. Medical, evaluation, adjustment, training, placement, and other services will have to incorporate techniques related to technology, information and service employment. Technology has, and will continue, to extend the capacity of workers with disabilities to participate in the workforce. Increasing computerization will require advanced training in computer technology, and increasing automation in manufacturing will demand concentrated training in technology. Finally, changing employee and employer relationships indicate that interpersonal skills will be as important to maintaining a job as the actual technical job skills.

Many of the events discussed in this document are seen as likely to occur, given the continuation of events and trends already in place. Several authors--Gallup and Proctor (1984), Naisbitt (1982, Naisbitt & Aburdene, 1985) and Norwood (1986)--present pictures of the future labor market. Two significant factors reported by them are: (a) less than 20% of our working population today are engaged in manufacturing, and (b) of the two million new jobs that will be created in the near future, 90% will be in the service and information areas, with only 10% in manufacturing.

These statistics indicate needed changes in rehabilitation programming, and the time to plan for such changes is now. It is imperative that rehabilitation programs and services be examined in terms of these labor market trends. Some trends are clear and distinct; others are ambiguous and unclear. With trends toward an older clientele, changing labor markets, and geographical relocations of the centers for commerce occurring, rehabilitation organizations will be confronted by a future characterized by radically different client expectations and workplace requirements.

The remainder of this report is devoted to specific topics developed through the deliberations of the study group. Unit One, The Changing Work Scene, addresses a variety of issues, e.g., social and political developments, that are likely to have a direct effect on the workplace. The World of Work - Tomorrow, Unit Three, is devoted to a discussion of projections about employment opportunities. The issues regarding public policies, service program initiatives, and

partnerships are reviewed in Unit Four, Expanding Horizons for People with Disabilities. Unit Five, Implications for People with Disabilities and Vocational Rehabilitation Programs, builds on the work of the first four chapters to delineate how these groups should respond to the issues, projections, and challenges presented in the material. Finally, Unit Six, Implications for Action, is a listing of specific steps that can be taken to help prepare rehabilitation organizations and consumers for the future workplace.

Unit Two
The Changing Work Scene

**Objectives.** To review trends and potential future characteristics of work in America, specifically examining (a) characteristics of the U. S. population, (b) economic developments and technology, and (c) social and political trends.

**Overview.** This unit provides a discussion of the broad trends developing in relation to work in America. Age structure, participation by women, education, and immigration are reviewed to assess recent experiences related to the population at large. Economic and technological developments related to energy, imported goods, changes in business and industry, consumption patterns, government entitlement programs, computer applications, and workplace accommodations are presented to assess their impact on the future of Vocational Rehabilitation (VR).

## Introduction

The sage has said, "The future is not what it used to be!" Patterns of employment are changing due to new technologies that have spawned new types of jobs. Manufacturing is decreasing rapidly as the chief activity around which other work activities are organized. Instead, services and information are becoming the predominant

industries, and the instigators of other economic activity, including manufacturing. Super (1983, p. 32) wrote "...the past still lives, the present persists, and the future cometh" in regard to our understanding of work. People are indeed guided by the times and the past in charting the course for the future of work in America. According to the U. S. Department of Labor (1986) the population and labor force in this country will grow very slowly over the coming decade. The pool of young workers entering the labor market will shrink, but the portion of minority youth and women entering the labor force will increase substantially. People are living longer and this fact, coupled with the decline of younger workers entering the future labor force, will cause a significant rise in the average age of the work force. The "greening" of America has given way to the "graying" of America.

These and other trends guide the future of a changing American work scene. This unit is an effort to examine the possibilities for the future through a review of selected trends. Although it is possible to study many topics influencing the American workplace, this review is limited to brief sketches of the following areas: (a) characteristics of the population, (b) economic developments and technology, and (c) social and political trends.

## Characteristics of the U. S. Population

A number of factors have an impact on the composition of the workforce and the types of jobs that will be available in the United States. Age structure, the participation of women, education, and immigration are frequently cited in contemporary discussions of the workforce.

### *Age Structure*

The U. S. Census Bureau is now projecting that by 2030 there will be about the same proportion of people in every five-year age group from 0 to 69 (Townsend, 1986a). This is attributable to increased life expectancies as a result of improved health care and healthier life styles, and reductions in birth rates--the birth rate declined from 3.7 children for women of childbearing age in the 1950's to 1.7 in the late 1970's (Yankelovich, 1981). Therefore, unless something unforeseen takes place, there will be relatively fewer young workers entering the work force.

### *Participation by Women*

Some followers of the labor market have called the entry of women into the mainstream of working America the most remarkable change in the second half of the century (Linden, 1987). The following summarizes changes in women's participation in work outside the home.

1. The number of working mothers has increased tenfold since the period just before World War II (Fitzgerald & Betz, 1983).

2. In 1979, 60% of all women aged 18 to 64 were working outside the home, constituting more than 40% of all workers (U.S. Department of Labor, 1980).

3. In 1978 more women than men were admitted to colleges and universities (Yankelovich, 1981).

4. Between 1980 and 1985, women obtained 66% of the new jobs in the U.S. economy; women's employment has grown by 2.4% a year since 1980, while men's employment has grown by 0.9% annually (Russell, 1986).

5. In nearly one-fifth of the 26 million dual-earner couples, the wife earns more than the husband (U.S. Bureau of the Census, 1986).

6. Beginning in 1986, women workers became a majority of professional employees in the U.S.; by 1995 it is projected that women entrepreneurs will initiate one-half of the new businesses (contrasted to one in ten in 1960); and 35% of executives, administrators, and managers are women (Bloom, 1986).

These are among the myriad data regarding the movement of women into the American workplace. The impact of their participation has been dramatic, and the American economy has expanded to incorporate women into almost every facet of work.

### *Education*

"Education is the driving force behind Americans' social and economic mobility. Each generation of Americans is better educated

than the one preceding it" (Linden, 1986, p 4). Americans are indeed involved in education in greater numbers than ever before, as indicated by all types of statistics.

1. One in ten Americans over age 16 is in college, vocational school, or an adult education program (National Center for Education Statistics, 1984).

2. Expenditures in all schools rose from $119 billion in 1975 to an estimated $245 billion in 1984 (Edmondson, 1986).

3. Nine out of ten Americans aged 25 to 29 are high school graduates compared to fewer than one in two at the end of World War II; in the past 20 years, the number of college degrees awarded annually has more than doubled; and nearly half of all people in their late 20s have at least some college (Linden, 1986).

This trend toward increased education is clearly in keeping with the projections for greater education and skill requirements of the workplace of the future.

***Immigration***

One additional general factor affecting the composition of the workforce is immigration. The Census Bureau has estimated immigration into the U. S. at 577,000 for 1985 (American Demographics, 1987a). This has been due to the influx of immigrants from Latin American, Caribbean and Asian countries. As a result, the U.S. Hispanic population in particular has increased and is projected to grow to between 27 and 42 million by 2010 (Exter, 1987). Although recent legislation may have a deterrent effect on immigration, it is clear that Hispanics are a fast growing segment of the American population.

The three factors discussed above are resulting in a workforce that can be characterized as (a) older with fewer young entrants, (b) involving significantly greater participation by women in all levels of work, and (c) including a number of immigrants, especially from Hispanic countries.

## Economic Developments and Technology

The economic development of the U. S. during the period following World War II was an unusual phenomenon as evidenced by the following statement from Yankelovich (1981, p. 169), a close follower of social and political trends in this country.

> The postwar (WWII) quarter-century was indeed a period of pulsating growth by nearly every measure. The economy grew, personal incomes grew, the population grew, schools and colleges grew, the labor force grew, the number of businesses grew, science, research and development grew, productivity grew, the government grew and the ownership of products--cars, TV sets, appliances and homes--virtually exploded.

However, the 1970's initiated an era during which the U. S. had to deal with a diminished eminence in economic affairs and the rise of an international, more interdependent economic environment. Some aspects of the economy and technology directly affecting the future workplace include (a) energy supplies, (b) imported goods, (c) changes in business and industry, (d) consumption patterns, (e) government entitlement programs, and (f) computer applications.

### *Energy Supplies*

"On some unnoticed day in the nineteen-sixties, the control of world oil supplies and prices had shifted from the Gulf of Mexico to the Gulf of Aquaba." (Yankelovich, 1981, pp. 164-165). The year 1973 marked the end of the era of cheap energy in the U. S. Before the embargo of that year by the Organization of Petroleum Exporting Countries (OPEC), oil sold on the world market at just over $2 a barrel, and the U. S. spent $4 billion a year for imported oil; in the late 1970's this cost had risen to $90 billion (Yankelovich, 1981). Although there has been a reduction in oil prices (and consequent economic problems in U. S. oil producing areas), the costs of energy, particularly imported oil, have risen significantly, consuming a greater amount of the resources of oil-driven economies such as the U. S.

### *Imported Goods*

In addition to imported oil, American consumers now purchase imported goods with a willingness unheard of prior to WWII. Imports from Japan, Korea, Taiwan, Singapore, Hong Kong and other areas are not only accepted, but are frequently sought after by American consumers, e.g.,1 in 3 cars bought today is an import compared to 1 in 300 in 1950 (American Demographics, 1986a). Followers of financial reports on the news can readily cite balance of payments deficits resulting from greater imports compared to exports as a clear indication of the changed trade patterns.

### *Business and Industry*

Closely tied to imports and energy are basic changes in business and industry. Multiple factors, including technological developments, are affecting these sectors of the economy. The broadly publicized shift from manufacturing to service sector jobs has made the American public cognizant of basic changes in our economic structure. Data indicate that 50% of the 82 million U. S. jobs in 1976 were service; and projections for 1995 are that 61% of the 122 million jobs will be in this category (Staff , 1987). The U. S. competitive position in international economic terms is based on technology development in areas such as microprocessing rather than manufacturing capabilities.

American productivity has also come under question. The productive output of the American industrial worker (amount produced per hour) has not increased in recent years, while productivity has increased in countries such as Japan. Although this is a continuing concern for economic development, some possible improvement may occur since a growing part of the workforce is in the most productive years (ages 35-44) and a decrease in the value of the dollar may make American goods more competitive (Slater, 1987). However, economic growth is tied to number of workers and output per worker; thus, one or both need to increase to assure continued productivity. One additional factor of importance is the limited ability at the present time to measure the productivity of the service sector. With U. S. economic growth anticipated to be in the service sector, measurement of productivity in this area assumes greater importance.

American business and industry have also moved away from traditional locations based on a manufacturing economy, i.e., from the Snowbelt to the Sunbelt. Technological forces are changing U. S. cities from centers of production and distribution of goods to centers of administration and the production and distribution of information and services (Townsend, 1986b). Regional changes are coming about, e.g., of the 32.5 million new jobs projected to be created by 2030, the South will gain roughly 18 million, the West about 10 million, and the North about 5 million (Kasarda, Irwin & Hughes, 1986). Regional economic development patterns established in the recent past are projected to continue into the foreseeable future.

Not only are business and industry facing basic changes in methods, products and locations, they are changing their approach to disability as well. During the past decade, many U. S. corporations implemented disability management programs to curb the rising costs of employee health and accident insurance. Initiated as substance abuse programs, most have expanded to include many levels of "wellness" programming, seeking to shift from corporate insurance payments for illness and injury to programs designed for prevention. Some corporations, e.g., Kodak, have established internal rehabilitation programs with full-time rehabilitation counselors in selected locations.

The Washington Business Group on Health is one of several organizations funded by large corporations to find solutions to increasing health insurance costs. In 1978, this group began to explore the state-of-the-art in health promotion programs in work settings. Linkages to such programs may provide opportunities for VR agencies to work with corporations in disability management. Rehabilitation engineering and other services could facilitate the return to work of many workers who incur disabilities during employment.

### *Consumption Patterns*

The types of goods and services that people buy determine the market place and affect many employment opportunities. The most vivid example of this is the current trend toward services, including everything from fast food to financial counseling. The following reflect some of the changes occuring in U. S. consumption patterns.

1. The "experience" industry is booming, e.g., travel abroad and entertainment, with passports for pleasure or personal reasons increasing from 673,000 in 1960 to 2.1 million in 1980; overseas expenditures by U. S. travelers growing from $2.6 billion to $16.5 billion; and visits to national parks expanding from 70 to 300 million during the same period (Ogilvy, 1986).

2. The mail order business has reached $46 billion in sales in 1985 with an annual growth rate of about 10%; about 47% of Americans bought by mail in a recent one year period; and a national television network sales operation, reaching 8 million households, recently had $160 million in annual sales (Schwartz, 1986b).

3. "Downscale" discount stores, targeting lower income groups, have experienced phenomenal success in retail markets.

4. Approximately 40 cents from every food dollar is spent on meals prepared away from home compared to 25 cents in the 1960's (National Restaurant Association, 1986).

5. With more and more two-earner households, there should be growth in spending on entertainment, food away from home, and applicances and services that capitalize on leisure time (American Demograhpics, 1986b).

There are other obvious trends in consumption patterns such as for more fuel efficient automobiles, energy efficient homes, prepared foods, and health care. These trends are particularly important to the economy, especially one that is as consumption-oriented as the U. S. The demographic changes with more of the population in older age groups will also affect the types of goods and services in demand in this country.

### *Government Entitlement Programs*

Government spending has long been recognized as having a major influence on economic development. Major growth sectors in federal spending are entitlement programs such as Social Security, Medicare, Medicaid, and Public Welfare. Federal entitlement programs have grown so that they are approximately half of the federal budget (Yankelovich, 1981). With an increasingly older population, such benefits are likely to continue and may increase due in part to the

political clout of this segment of the population, e.g., the American Association of Retired Persons has recently run a national recruitment ad on television reporting it has 20 million members. Retirement benefits offered through private pensions and Social Security have enabled many to drop out of the workforce at age 62. As Linden (1987) reported, only 15% of men aged 65 and older are working now, compared to 60% early in this century.

Social Security operates primarily as an income transfer program, taking about 12% out of paychecks today with an increased proportion expected as more workers enter retirement (American Demographics, 1987b). Therefore, entitlement programs affect the labor force by making it attractive to older workers to retire from work, thus opening up jobs for younger workers--but also placing an added financial burden on the young. Entitlement programs such as Social Security Disability Insurance make early retirement attractive to the individual who sustains a work-related disability prior to age 62, taking additional workers out of the labor market.

### *Computer Applications*

Computers are changing all kinds of products and opening up new opportunities for workers with disabilities. Rehabilitation engineers, counselors, and rehabilitation workers of all kinds can implement rehabilitation technology. Although this technology may take many forms, over the next ten years rehabilitation facilities and the individuals they serve will benefit most from advances in computer technology.

The use of personal computers, i.e., small desk units of relatively low cost, will expand dramatically. This expansion will bring greater opportunities for many persons with disabilities to enter the labor market. For example, tools such as those used in drafting, which may have been too cumbersome for some people with disabilities, can be replaced by computer graphics systems requiring limited hand dexterity (design instructions may be entered through a standard keyboard or other switching operations). Low cost time-sharing computers will enable an increasing number of individuals with disabilities to work at home.

Further advances in microcircuitry and miniaturization of hearing and visual aid components will result in smaller and lighter devices. Aids to daily living in the home will become more accessible for

more people in regulating lights, radios, televisions, telephones, and other appliances. Artificial voices and voice-controlled computers to operate wheelchairs and other equipment will be available in the near future. Equipment that will convert printed messages to vocal messages already exists. In addition to communication technology for persons with disabilities, technological advances continue to be made in recreation, education, vocational training, placement and daily living activities.

One concern regarding technology and disability is the gap between research and practice. That is, it is often more feasible to develop a model or prototype of assistive devices than it is to develop ways and means for full-scale manufacturing and marketing of those devices. Corporations are subject to two major limitations in developing assistive technology--product liability insurance and the expense of building prototypes. The liability insurance manufacturers carry is expensive and must cover the life of the product. A single major lawsuit may put a company out of business. Unfortunately, the economics of assistive devices makes for a strong deterrent to the manufacture of new technology that could be beneficial to people with disabilities.

The factors described above--energy costs, imported goods, changes in business and industry, consumption patterns, government entitlement programs and computer applications--are all affecting the workplace and the labor market. These affect the demand for workers and the ebb and flow of workers in and out of the labor market. One can be optimistic about the positive effects these factors have on the ability of people with disabilities to participate in work, e.g., the expanded capacity to work through computer assisted devices. Yet, one must be cautious about such optimism by examining the factors that may encourage workers with disabilities not to enter, or to drop out of the labor market, e.g., attractive disability retirement benefits. In addition, these economic and technological developments interact with social and political developments to create a complex set of issues confronting people with disabilities and vocational rehabilitation programs.

## Social and Political Trends

In addition to population, economics and technology, there are important social and political trends affecting the workplace and people with disabilities. It is easy to document major social changes

that have taken place in the third quarter of the 20th century, e.g., civil rights, the changing role of women and families, and attitudes toward sexuality and marriage. A great deal has been happening in regard to disability programs as well. Major social and political trends influencing disability programs and people with disabilities discussed in this unit are (a) institutional to self-help, (b) hierachies to networking, (c) centralization to decentralization, (d) aging voter population, and (e) time and the workplace.

### *Institutional to Self-Help*

Naisbitt (1984) has outlined ten new directions occurring in American Society in his book, Megatrends. Naisbitt observes that 15 million Americans now belong to some 500,000 self-help groups for almost every conceivable problem including those brought about by disability. Parents without partners, neighborhood crime watch programs, and Alcoholics Anonymous are but a few examples of the self-help movement. This movement accelerated during the 1970s when many Americans became disillusioned with government and other institutions. The trend from institutional help to self-help offers new opportunities for people with disabilities, their advocates and rehabilitation practitioners.

### *Hierarchies to Networking*

In his analysis, Naisbitt (1984) also identified a trend away from bureaucratic hierarchies to networking. In simplest terms, networks are people talking with each other, sharing ideas, information and resources. Networking is often the first step to the organization of community self-help groups, offering close linkages among people that are not possible for bureaucracies to achieve. Bureaucracies emphasize conventional organizations with power and authority centralized at the top with well defined communication channels and procedures. Networks, on the other hand, are arranged somewhat like fishnets with multitudes of knotted cells, each linked to the other in all directions--not just "up" and "down" as in the bureaucracy. The independent living movement is an example of networking by people with disabilities. The difficulties encountered in dealing with bureaucracies, the impersonal atmosphere of most formal organizations, and the failure of some public systems to solve human problems have stimulated people to work with each other outside such organizations.

### *Centralization to Decentralization*

Human services block grants from the federal government to state governments under recent administrations provide a clear example of the trend toward decentralization of political power. Although VR programs were not included in this process, the possibility is always present. Deinstitutionalization in the mental health and mental retardation fields is an example of the trend from large centralized treatment facilities to smaller decentralized community-based programs.

The key to decentralization of political power in the United States is the quest for greater representativeness as an ideal. This ideal is the prime motivator of local action, and the demands for greater bottom-up participation in policy decisions have restructured many political processes throughout the country. Federal regulations for VR and independent living programs reflect the trend toward local participation in policy making, with clear requirements to involve consumers, service providers, and other interested citizens in policy making.

### *Aging Voter Population*

An additional force in our society that is beginning to exert political influence upon rehabilitation and other disability programs is the aging voter population. The U. S. Bureau of the Census (1986) reported that, for the first time in the history of our country, there are more people age 65 and over in the population than teenagers. By the end of this decade the number of older citizens is expected to surpass 31 million while the teenage population will shrink to around 23 million. Some analysts worry about possible conflicts between the younger and older generations over priorities for pubic spending. Social Security continues to be a source of public debate, and the problem of health and rehabilitation costs for the aging is growing.

Political influence is shifting in favor of older Americans because they can and do vote. As disability becomes an ever greater issue among older Americans, new opportunities exist for applying rehabilitation processes and services to this group. As VR programs become more responsive to the needs of this population, VR can expect to receive additional political support from this group. This is clearly a challenging area for rehabilitation professionals in designing

programs and services to help meet the needs of older citizens who are disabled.

### *Time and the Workplace*

The workplace of today is a rather traditional embodiment of fixed space, regular hours and a fairly structured job setting for an individual geared toward producing a particular product. This concept of work orients an individual to a job in fixed time and space. These notions are beginning to change. The acceptable boundaries in terms of time, space, and "one person, one job" are undergoing considerable alteration. New ideas within the workplace have begun to evolve to allow for new and increased manpower within the workforce, particularly women, women with children, elderly persons, and persons with disabilities.

Flexible scheduling, deviated workweek, and flex time are terms that apply to modification of hours spent on the job to accommodate other needs and realities in a person's life, i.e., child care, attendant needs, and increased leisure time. Job sharing, a variation of flexible scheduling, allows two or more workers to share a job heretofore performed by one person. This concept, for example, permits individuals with certain disabilities to perform meaningful work for less hours of work per week. Individuals with physical limitations or stress-related disabilities may find this opportunity to be the difference between employment and unemployment. Flexible scheduling has been demonstrated to lend itself to improved morale in the workplace, reduced absenteeism, a more diversified workforce, and increased productivity while on the job.

Social and political trends affecting the workplace are forecast to have a major impact on the participation of workers with disabilities. The effect that self-help movements will have on vocational rehabilitation agencies and the workplace is difficult to determine. However, if many disabled individuals seek to operate their own rehabilitation programs and obtain federal, state and local support for the programs, the traditional state-federal program may undergo significant changes. The use of social networks, rather than established organizations, by people with disabilities could also have an effect on established rehabiltitation professions in a variety of settings. The third related trend, decentralization, reinforces the position of strong consumer-operated community-based programs that rely heavily on social networks and support for their

effectiveness. In addition to these factors that may have a major impact on the organization and delivery of rehabilitation services, the role of the older population in determining who and what services are to be provided could shift the service population toward an older clientele. Finally, trends toward more adaptable time scheduling of work can make it possible for some workers with disabilities to have greater opportunities for meaningful employment.

## Conclusions and Implications

The Census Bureau expects the overall U. S. population to increase from 239 million in 1985 to 283 million in 2010 (Exter, 1987). Employment growth is projected to continue from 103 million jobs in 1986 to 122 million in 1995 (Staff, 1987). The influence of the factors cited above on the future workplace is uncertain. However, it appears to be a safe bet that the better jobs will be contingent on advanced education; that women will continue to move into all aspects of the workplace; and that immigration will provide an additional source of labor, offsetting to some extent the reduced numbers of young people available for employment.

Vocational rehabilitation programs are serving many individuals classified as severely disabled in regard to their employment potential. While presenting employability problems that require creative interventions by rehabilitation practitioners, VR clients provide a source of labor to fill many of the jobs projected to be available in the future, especially those that have traditionally been filled by younger workers.

A number of economic trends are important to the future workplace. Externally, we have now become involved with nations such as Japan, Korea and Saudi Arabia through interdependent economic relationships. The shift to Pacific Basin and Middle East countries represents a change from our more traditional economic ties to Europe. We also have genuine international competition from countries that are as advanced as the U. S. in many respects. Overall, such international economic development has led to an improved quality of life for many more people without greatly diminishing the quality of life for Americans.

Driven by technology and competition from abroad, the internal U. S. economy is undergoing major structural changes. Manufacturing is

on the decline; services are on the rise; imported goods are available in almost every market place and every product line; consumption patterns are shifting as leisure time is increased and women enter the labor force; entitlement programs take a major share of government resources and encourage retirement; energy has become an expensive commodity; technology is opening up new opportunities as well as displacing old jobs; and, although many remain unemployed, more people with disabilities are being accommodated in the workplace. There are multiple trends affecting what type of work Americans do, who it is done for, what type of rewards it will bring, and how much the rewards will buy.

Social trends and politics influence whatever decisions will be made in the future, e.g., the entitlement programs for retirees and elderly citizens. Because of the sizeable numbers of people in this group, their power at the polls, and general public support of the programs, politicians appear to be very reluctant to restrict programs for this population. Likewise, people with disabilities are assuming leadership and advocacy for the programs designed to meet their needs, and seek equality for services and funds. It does not seem likely that the U. S. will turn back the clock in regard to disability policies that have been established in the recent past.

The trends toward decentralization have considerably facilitated the development of community-based programs for people with disabilities. These programs receive funds which are collected by both federal and state governments to operate programs at the community level. Dependent upon networks and community systems rather than large bureaucracies, these programs can be more responsive to local needs and changes. They have built up rather substantial bases of community support which are translated into legislative and political clout. They also have networks throughout the country in order to mobilize national support for federal legislative and service initiatives.

## Unit Three
## The World of Work - Tomorrow

**Objectives.** There are two primary objectives for this unit: (a) to address the types of jobs that will offer employment opportunities for persons with disabilities in the future; and (b) to identify the skills that will be required by individuals with disabilities to perform the tasks required in the jobs.

**Overview.** It is predicted that an emerging service economy will provide 90% of the jobs in the U. S. by the year 2000. There will be sufficient jobs for persons with disabilities in the future; however many of these jobs will not be very lucrative in terms of pay and other benefits. Primarily, future jobs will cluster in the areas of food service, business, health and cleaning services. There are at least six identifiable trends in the workplace: (a) required jobs are becoming more technical; (b) computers are an important tool throughout the occupational spectrum; (c) occupations are becoming more specialized; (d) teamwork is becoming more important; (e) employers are becoming more client- and customer-oriented; and (f) the pace of change is rapid. Each of these trends contributes to the need for worker skills in one or more of the following: (a) basic literacy, communication and computational skills; (b) interpersonal skills; (c) computer skills; and (d) reasoning and generalizing skills.

## Introduction

The emerging service economy can offer both positive and negative benefits for the estimated 13.2 million workers with disabilities projected to be in the labor force by the year 2000. The good news is that the service economy is expected to provide many new jobs over the next decade, many of which could be done by workers with disabilities. On the negative side, the jobs will pay far less than technical jobs requiring higher levels of education and training. Service jobs of today, on the average, pay less than the current U. S. average hourly wage of $8.50 for production workers. Average earnings in services are 3% below those in all other industries and 8% below those in manufacturing (Brown, 1986). Some economists predict that the growing service economy will provide 90% of all new jobs over the next decade. Others fear that we are heading toward a two-tiered labor force, i.e., an elite cadre of highly skilled technicians with high pay existing along-side unskilled service workers with low paying jobs.

In a recent study done for the Congressional Joint Economic Committee, it was found that while total employment in the U. S. grew by more than eight million between 1979 and 1984, the number of jobs paying $14,000 a year or more actually declined by 1.8 million. All of the net growth occurred in jobs paying less than $14,000 and nearly 60% of the net growth took place in jobs that paid less than $7,000 a year. Although more people are working now, there is less opportunity for good jobs that pay reasonably well (Richmond Times Dispatch, December 10, 1986).

A number of economists fear that a service economy will create even larger divisions between those who have (highly skilled technical workers) and those who have not (lower skilled service workers). Other economists argue that a thriving service economy is a sign of prosperity because service industries expand when national and personal incomes rise. Service employment has risen markedly in several wealthy nations, notably Germany and Japan, where service jobs grew by 12% between 1960 and 1980 compared to only 9% in the U. S.

Regardless of the advantages and disadvantages of employment in the service sector, it is important that projections regarding the labor market be studied by vocational rehabilitation professionals and others interested in the employment of workers with disabilities.

Therefore, this unit is devoted to a review of forecasts for the future and a discussion of some of the critical skills required to compete effectively in these markets.

## Where the New Jobs Will Be

### *Projected Employment Trends*

Table 1 shows national projected changes in employment for selected industries from 1984 to 1995. The business services industry is projected to lead all others in numbers of new jobs and to rank second in terms of the rate of employment growth. Although other industries such as retail trade, eating and drinking places, wholesale trade and new construction were each larger than business services, they will not grow as fast as business services through 1995.

### *High Tech Industries*

In contrast to what is heard, high-tech industries are projected to account for only a small proportion of new jobs through 1995. Nationally, employment in high-tech industries accounted for 6.1% of all wage and salary jobs in 1972, 6.4% in 1984, and is projected to represent only 7.0% by 1995. Most of this small growth in high-tech jobs will be in computer and data processing services (U. S. Department of Labor, 1986).

### *Increases and Decreases*

Most new jobs will be found in business, retail trade, eating and drinking places, whoesale trade, and medical and professional services. The fastest growing jobs are in medical services, business services, computers, materials handling, and transportation and professional services. The most rapidly declining clusters of jobs will be found in industries working with cotton, wooden containers, leather, iron, sugar, rail transportation, and nonferrous metal ores mining.

### *Business Services Industry*

As indicated by Table 1, the business services industry is projected to lead all industries in the number of new jobs, and ranks second in the rate of employment growth. Personick (1986), an economist with

Table 1

Projected Changes in Employment for Selected Industries, 1984-85

| Most New Jobs | Employment Gain (in thousands) |
|---|---|
| Business services | 2,633 |
| Retail trade, except eating and drinking places | 1,691 |
| Eating and drinking places | 1,203 |
| Wholesale trade | 1,088 |
| Medical services, n.e.c. | 1,065 |
| Professional services, n.e.c. | 1,040 |
| New construction | 588 |
| Doctors' and dentists' services | 540 |
| Hotels and lodging places | 385 |
| Credit agencies and financial brokers | 382 |
| **Fastest Growing** | **Average Annual % Rate of Change** |
| Medical services, n.e.c. | 4.3 |
| Business services | 4.2 |
| Computers and peripheral equipment | 3.7 |
| Materials and handlng equipment | 3.7 |
| Transportation services | 3.5 |
| Professional services, n.e.c. | 3.5 |
| Scientific and controlling instruments | 2.9 |
| Medical instruments and supplies | 2.8 |
| Doctor's and dentists' services | 2.6 |
| Plastics products | 2.5 |
| **Most Rapidly Declining** | **Average Annual % Rate of Change** |
| Cotton | -4.2 |
| Wooden containers | -3.6 |
| Leather products including footwear | -3.8 |
| Iron and ferroalloy ores mining | -2.7 |
| Sugar | -2.7 |
| Leather tanning and finishing | -2.6 |
| Railroad transportation | -2.6 |
| Nonferrous metal ores mining, except copper | -2.6 |
| Dairy products | -2.3 |
| Blast furnaces and basic steel products | -2.2 |

n.e.c. = not elsewhere classified
Source: U.S. Department of Labor, BLS, April, 1986.

the Bureau of Labor Statistics, points to two underlying reasons for the projected growth in business services: (a) new types of services, e.g., computers, are component parts of current businesses; and (b) many organizations contract services rather than using their own employees. Personick believes that most of the growth in the computer industry will be in programming and software services. As new and less expensive computer hardware comes on the market, small businesses and private consumers will be stimulated to use new software including packaged software.

***Temporary Help Industry***

Another business service with potential for rapid future growth is the temporary help industry. Firms have become more successful in using temporary help to meet peak workloads and to weather business cycle swings without having to hire or fire permanent employees. Also, more workers may be willing to work as temporaries in coming years because of the opportunities for flexible scheduling and for part-time employment. Between 1978 and 1983, employment in temporary help agencies grew a rapid 6.6% a year, and in 1984 alone, the job level increased another third. The use of temporaries is expected to increase 5.0% a year between 1984 and 1995, faster than the 4.2% rate projected for business services as a whole.

***Professional Services***

As indicated by Table 1, the professional services area will need many new workers. Included here are legal and engineering services, and accounting, auditing and bookkeeping services. Increased demand such as increased litigation, and contracting for specialized professional services has led to a 4.4% annual growth in employment and a 4.9% increase in output over the 1959-84 period. Growth is projected to continue strong through the 1990's, averaging 3.5% for employment and 4.1% for output. More than one million new jobs are projected to be added by 1995, bringing employment in the professional services sector to 3.3 million.

***Wholesale/Retail Trade and Food/Beverage Services***

According to the Bureau of Labor Statistics, employment in wholesale and retail trade and in eating and drinking establishments is projected to grow by 4 million, to more than 28 million, by 1995.

However, the rate of job growth, at 1.4% a year, is just slightly faster than that for the economy as a whole.

The real output of eating and drinking places rose rapidly over the past decade as more women entered the labor force and as the large population of young people boosted the popularity of fast-food establishments. Employment increases in eating and drinking places represented more than 10% of all jobs created in the economy between 1969 and 1979, and more than 16% of new jobs between 1979 and 1984. Demand for meals away from home is expected to taper off in the next decade since the rate of growth of total disposable income is projected to slow. There will still be opportunities for employment gains, however, as an older population shifts its demand toward more labor intensive "sit-down" restaurants. Employment in eating and drinking places is projected to rise by 1.2 million, to 6.9 million by 1995, accounting for only about 7.6% of all new jobs. Other retail establishments showing projected large job gains include grocery stores and department stores, with each group growing faster than total retail trade employment as a whole.

### *Health Care*

In health care, the current trend is to contain excessive costs of medical care. These cost containment efforts are being carried out to restrict the use of hospitals when adequate medical services can be obtained elsewhere. Part of the cutback in hospital care is being taken up by physicians' offices and other medical facilities such as nursing homes, emergency treatment centers, and home health services. This is possible, in part, because some procedures that used to require a hospital stay can now be performed in alternative settings. The shift has been encouraged by public and private health insurers because hospitals are generally more capital intensive and have higher overhead costs than some other types of health care establishments. Over the next 11 years, the Bureau of Labor Standards (BLS) projects new health care jobs to number about 1.9 million, about one out of every nine new jobs.

These projections point out some general directions that should be of interest to vocational rehabilitation professionals. The preparation of rehabilitation clients for employment in these labor markets will require continuing attention to the changing jobs and to the skills

required to compete effectively in the jobs. The next section describes some of the concerns related to such employability skills.

## What the Jobs Will Require

Martin and Tolson (1986), researchers at the University of Virginia, reported that social, economic, and technological changes interact with each other to create changes in jobs and related skill requirements. The shift to a service economy, an increase in the number of women in the labor force, the aging population, and the trend toward deregulation of the economy have all affected the nature of work. Social and economic changes have combined to require new skills. For example, increased competition among financial institutions requires a measure of sales skills by bank tellers and the knowledge to interpret the bank's various services to customers. These skills were not needed in years past. The growing sophistication of consumers has led to more training and higher education qualifications in many jobs.

By interviewing more than 100 employers in Virginia, Martin and Tolson (1986) identified six trends in the workplace. They studied changing job skills in 60 jobs that are projected to employ significant numbers of people in the future. These six trends in the workplace result from social, economic and technological change and reflect the changing nature of work. The trends are (a) required skills are becoming more technical; (b) computers are important tools throughout the occupational spectrum; (c) occupations are becoming more specialized; (d) teamwork is becoming more important; (e) employers are becoming more client- and customer-oriented; and (f) the pace of change is rapid.

Although this research is limited to Virginia, it is not likely that workplace trends in that state are markedly different from those in most other states and these trends appear to be consistent throughout the country.

Technological changes, especially in the tools people use in their work, affect jobs in several ways. The prime example is computers which not only have had an impact on many existing jobs and how they are performed, but also have created many new jobs to support the computer industry. The invention of the microcomputer has affected jobs in two major ways. First, it has given rise to new industries and businesses that manufacture not only computer

equipment, but also a variety of peripheral devices. Others write programs for the machines, manufacture supplies, and sell or repair equipment and material. These industries and businesses employ increasing numbers of people, many of whom are required to have special skills.

Second, computerization has affected jobs by increasing the number of poeple in other fields who are required to use computers. Some occupations are more affected than others; but in general, jobs that require workers to know how to operate microcomputers are growing, and both the number of people using computers at work and the ways in which computers are used are likely to keep increasing.

In many occupations employers are increasingly organizing employees into teams. For example, references to the health care team are common, but employers are also organizing workers in this way in engineering, automobile repair and computer programming. Food service teams and janitorial teams are also emerging. The trend toward working in teams is related to the trend toward specialization. As businesses experience increasing competition, employers' awareness of the importance of public contact is also increasing. Employers realize that customer or client satisfaction is vital to their survival and that pleasant, helpful service contributes to attracting and holding business. This trend is taking place everywhere but particularly in areas like banking and health care, where competition has recently increased. As more vendors employ their own repair people, employees in this area too have more direct customer contact than before.

## Conclusions and Implications

Although this has been a brief review of labor market forecasts, it reveals some factors that should be of particular interest to the rehabilitation community. First, when examining the jobs themselves it becomes apparent what the new employment sectors are likely to be. Making the information available to workers with disabilities makes it possible for them to select career paths that will enable them to participate in competitive employment. As indicated earlier in the unit, the business services industry, retail and wholesale trade, eating and drinking services, and new construction are projected to remain strong through 1995. Health and professional services will also continue to expand. This material,

coupled with information from unit two, indicates that the workplace will be highly competitive, but will also offer opportunities for variations from traditional employment patterns, e.g., temporary employment jobs.

The second general conclusion that can be drawn from this material is that the skills required for competitive positions are generally of two classes: (a) technical and professional skills usually associated with advanced education and training; and (b) what may be called general employability skills such as teamwork, human relations, and basic literarcy/communication/computational abilities. The message for workers with disabilities is much the same as that for the general population. For those with the abilities and motivation to seek advanced education and training, opportunities must be made available to secure access to and participation in such activities. For those with lesser abilities or those who may not be able to access these opportunities, it is important to acquire the general employability skills.

Access to education has been a primary concern for many individuals with disabilities and their families. Opening the academic community to youth with disabilities has been a driving force of social policy and legislation during the past twenty years. This, although important in the past, will be even more critical for competitive employment in the future. Also, the current concerns with using technology to the maximum extent possible for people with disabilities should expand the opportunities to engage in the variety of jobs calling for advanced training and skills.

The labor market of the future seems to provide increased opportunities for workers with disabilities who may not possess the ability to engage in advanced education and training or who may not be able to take advantage of these programs. Given that many of the new jobs will be in rather low level service jobs requiring interpersonal skills and the ability to sustain continued productive activity, many workers will find employment opportunities available to them. Many of the service jobs are suitable for supported employment placements as well.

Finally, labor market forecasts call for continuing changes in types of jobs and similarly some of the skills required by these jobs. Rehabilitation professionals and workers with disabilities can work together to attend to the evolving marketplace in order to prepare to

meet the challenges and opportunities that will be provided in the future. Many of the trends already in place, e.g., mainstreaming and technology applications, will serve to enhance the potential of people with disabilities to achieve employability and gain employment in the workplace of the future.

## Unit Four
## Expanding Horizons for People with Disabilities

**Objective.** The purpose of this unit is to discuss a compendium of resources, opportunities and relationships that will offer increased benefits to persons with disabilities in the vocational arena of the future.

**Overview.** This unit presents some techniques and promising innovative partnerships that have benefits for persons with disabilities. These techniques and partnerships are discussed in terms of new or expanded opportunities anticipated for individuals with disabilities, especially as related to future work and the workplace, and the population that VR agencies are likely to serve in the future. Major points of emphasis are techniques by which existing legislative opportunities can be leveraged and barriers can be overcome through collaborative and assertive cooperation among the private sector, public sector and consumers of rehabilitation services. The unit addresses new populations entering rehabilitation by virtue of medical advances and demographic changes and implications for the field.

### Introduction

The first three units of this publication have attempted to open the perspective of the reader to a changed world, to present some

general trends affecting the overall work scene, and to preview some of the forecasts for the labor market. What else could be addressed in regard to this topic? The prime study group felt there were other factors that affect the participation of workers with disabilities in the labor market that should be reviewed. These include the actual clients entering the system, public policies on disability, new service program initiatives, and partnerships.

Understanding the shifting population entering the public rehabilitation system undergirds the ability of the system to respond effectively with employment preparation and related rehabilitation efforts. There has been a mandated emphasis on services to persons with severe disabilities. This population presents many challenges to the vocational rehabilitation program and requires more creative solutions to the problems and barriers facing these individuals in preparing for and accessing new jobs.

Changing public policies on disability, especially those regarding equal employment opportunities, workers' compensation, and health care are vitally important to the ability of, and incentives for, workers with disabilities to enter into employment preparation programs or to seek employment. Finally, new service initiatives and partnerships with employers, unions and other significant groups are essential to help workers with disabilities attain the employability skills they need, and to access work. This unit provides a review of these four areas, calling attention to some of the important issues in each, and offering suggestions for meeting some of the needs of the future.

## Vocational Rehabilitation Service Clientele

During the past decade, several demographic studies have been conducted to gather information about the social and economic impact of disability in the U. S. Some of the more significant studies are the 1978 Social Security Survey of Disability and Work, the 1980 Census Disability Questions, the continuing National Health Interview Surveys, and the 1977 Disability Supplement. All of the studies have implications for future rehabilitation planning, programs and services. In his review of these studies, Haber (1985) found (a) that people with disabilities are older, less educated, and less vocationally skilled than persons without disabilities; (b) more blacks than whites are disabled, as are lower skilled workers; (c) disability rates are higher in the South and in rural areas; (d) farmers constitute a higher

proportion of the public with severe disabilities; and (e) workers with disabilities are less likely to be employed full-time, and their incomes and earnings are lower.

Bowe (1985) used the 1981 and 1982 Current Population Surveys to identify demographic trends and found that two out of three men with a disability who are of work age are unemployed; three out of four women with disabilities are unemployed; and one in eleven Americans of work age has a work disability, with prevalence rates highest among persons over age 65. Bowe has also constructed the following profiles of citizens with disabilities.

1. The typical working age woman with a disability in 1980 was age 51, had an eleventh grade education, was not in the labor force, and subsisted on less than $3,500 income.

2. The typical working age man with a disability was age 49, married, had completed the eleventh grade, was not in the labor force, and had less than $8,000 income. If employed full-time, the male worker with a disability earned on the average $18,755 per year.

Recently, DeJong (1987) observed the American adult population as being composed of more people with disabilities. Using the 1984 Health Interview Survey conducted by the National Center for Health Statistics, DeJong notes that in 1959, 3.7 million adults had a chronic health condition that rendered them unable to carry on activities such as working, going to school or doing housework; in 1984, that figure had grown to 8.2 million, an increase of 121%, while the overall adult population grew only 43%. The fastest growing segments are those who are most severely disabled, i.e., people who are unable to carry out major life activities because of a chronic health or disabling condition. Much of the growth in the number of persons with severe disabilities has occurred, not among the elderly as commonly thought, but among working age persons 17 to 64 years of age. Of the 4.5 million more persons with severe disabilities, about one-half come from the ranks of working age persons.

DeJong suggests that the increased prevalence in severe disability is in large part a product of society's success in saving lives and in extending the lives of those who become disabled. The increased cost of health and disability-related care can be attributed in some degree to this enormous success--society has yet to comprehend the

fact that disability is more a mark of its success than its failure. Indications are that the number of persons with disabilities will increase resulting in a greater need for rehabilitation programs and services.

A Current Population Survey conducted in 1986 by the U. S. Bureau of Labor Statistics revealed that two out of three Americans are in the civilian labor force. The total number of workers is listed as more than 106 million. Of the more than 13 million people of work-age who have a work disability, only about one third are employed, another third receive disability benefits, and the remaining third neither work nor draw disability benefits, presumably relying on family and friends for support.

The service population of the state-federal VR program has gradually shifted to a greater proportion of individuals characterized as "severely disabled". Data on the population of VR clients accepted and provided with services is available through the Rehabilitation Services Administration (1986a). Comparative statistics from Fiscal Years 1975 through 1985 reflect the folowing trends.

1. Acceptance of persons with severe disabilities into the program increased 3.1% in 1985, the third consecutive annual gain, representing 62.1% of all new acceptances for services.

2. The proportion of all persons served who were severely disabled was 62.3%.

3. The number of individuals with severe disabilities rehabilitated increased from 115,646 in 1975 to 135,229 in 1985 while the number of persons who were not severely disabled decreased from 208,293 to 93,423.

4. The number of individuals with severe disabilities closed as rehabilitated increased from 115,746 in 1975 to 135,229 in 1985 while the number of persons who are not severely disabled decreased from 208,293 to 93,423.

In addition to severity of disability, the VR service population for FY 1984 (Rehabilitation Services Administration, 1986b) can be characterized by the following.

1. Fifty percent of the clients served were under age 30 at referral.

2. Forty-six percent of the 357,000 closures (rehabilitants and nonrehabilitants) had less than a high school education or had been special education students.

3. Twenty-one percent received personal and vocational adjustment services; 12% received vocational school training; 10% were provided college or university training; 5% received on-the-job training; 3% received some type of academic training; and 2% received business school training.

4. Twenty-one percent had mental illness as the primary disability and 12% had mental retardation as the primary disability.

5. The proportion of female rehabilitants fell five percentage points from Fiscal Year 1981 to 43.3% in Fiscal Year 1984.

6. Hispanics represented 6.4% of the VR rehabilitants for Fiscal Year 1984 as compared to 7.2% of the total U.S. population on 7/1/84.

7. High school graduates represented 52.8% of the 1984 rehabilitants; however, those with less than 8 grades of education were as likely as those who completed 13 or more grades to be rehabilitated.

8. Seventy-four percent of the total served were not applicants for Social Security Disability.

## Public Policies on Disability

The National Council on the Handicapped published a statement of National Policy for Persons with Disabilities during February, 1986 (National Council on the Handicapped, 1986). The statement contains policy recommendations in twenty-two areas related to current problems concerning disability. The main thrust of the statement is toward full participation of people with disabilities in the mainstream of society with an absolute right to maximize quality of life potential through self determination. This document provides a rich resource for rehabilitation personnel in developing innovative

programs for the future. It serves as an excellent index to many of the current issues and trends related to disability. The major points in the policy statement related to this publication follow.

1. People with disabilities, to the extent that it is possible, should have the principal responsibility to solve their own problems and fulfill their potential.

2. A single point of entry for information, referral, counseling, and ombudsman assistance should be responsible for making an efficient continuum of human services delivery systems available to each person with a disability during the whole period of disability, including intervals when no services are sought or deemed necessary, or the disabling condition is inactive.

3. Accurate demographic information in regard to people with disabilities and their needs should be developed and updated on a regular basis.

4. Effective mechanisms to coordinate public, private, and voluntary disability-related activities should be developed at federal, state, and local levels.

5. Private sector involvement in the development of effective solutions for the special problems of disability should be encouraged and increased.

6. Long-term care institutions should be independence-oriented and operated with profound respect for the rights, dignity and developmental potential of the individual.

7. The unique needs of persons with disabilities living in rural areas should be examined carefully, and appropriate services should be developed and funded by government at all levels and by private sector entities.

### *Equal Rights for People with Disabilities*

The Rehabilitation Act of 1973 contains, among other requirements, Section 504 which is aimed at ending discrimination against people with disabilities. Federal regulations to implement these antidiscrimination requirements were not published until 1977, a

full four years after the law had passed. Leadership groups of and for people with disabilities had been intensely active for more than a decade focusing on this specific legislative outcome. The results of this legislation are bound to be far reaching for many years to come and in many yet unknown ways.

Those persons with disabilities who promoted Section 504 were aware that an imbalance of political power existed and it was not in their favor. Consequently, the resulting imbalance of equality also did not favor them. So Section 504 was inevitable at some point in time if we concur with the conclusions drawn more than a century ago by de Tocqueville.

> The gradual development of the principle of equality is...a providential fact: it is universal, it is lasting, it commonly eludes all human interference, and all events as well as all men contribute to its progress...the gradual and progressive development of social equality is at once the past and future of their history.

Equality may be described as a continuing struggle for power where the unequal fight to become equal. There is much evidence to support this view, that although equality as an ideal is broadly accepted in our history, those who attain equality fight for the power to claim it. The struggle for greater equality by people with disabilities continues and will be a significant and expanded issue in years to come. The following excerpt from the policy statements of the National Council on the Handicapped (1986) provides a glimpse of potential future action on equality issues.

> Government and the private sector should cooperate to develop a comprehensive, internally unified body of disability-related law which guarantees and enforces equal rights and provides opportunities for individuals with disabilities. This should be composed of concise, universally applicable, enforceable laws and regulations which effectively maximize the opportunities available to, and safeguard the rights of, individuals with disabilities without imposing counter-productive regulatory, bureaucratic, and economic requirements on disabled people and society.

### *Progressive Workers' Compensation Laws*

These laws have required employers to become more aware of disability issues in general, and also have spawned a whole new industry--private for profit rehabilitation firms serving employers and workers' compensation insurance companies. These laws have changed forever the fifty year tradition of rehabilitation as a service supplied by the state-federal VR program and associated workshops and facilities.

### *Health Care*

The implementation of emergency medical technology, decreased infant mortality rates, seatbelt legislation, and psychotropic medications have had a significant impact on people with disabilities. Persons who, ten years ago, may not have survived serious auto accidents now are living meaningful lives and can benefit from comprehensive rehabilitation programs. Similarly, individuals who may have died in infancy are surviving to working age. Long-acting psychotropic medications have provided the impetus for deinstitutionalization of individuals with chronic mental illness, and these individuals now are living and working in the community and are prime candidates for supported and transitional employment.

## Service Program Initiatives

### *Workplace Accommodations*

A trend influencing rehabilitation programs is the increased effort to modify job sites and the work environment to accommodate workers with disabilities. Job retention of trained workers is becoming a greater concern for business and industry. Accommodations are receiving widespread attention and rehabilitation engineering has arisen as a professional specialty in part as a result of this trend.

Berkeley Planning Associates (1982) completed a study of accommodations provided by federal contractors in compliance with Section 503 of the Rehabilitation Act of 1973. The Berkeley study concluded that over 50% of the accommodations reported did not require extra costs. An additional 30% of workers with disabilities received effective accommodations for less than $500 each. Workers

and employers both emphasized that most accommodations require more creative problem solving than money.

### *Transitional Services and Secondary Special Education Programming*

Transitional programming for youth with disabilities embodies changing philosophies within secondary school systems, vocational-technical schools, rehabilitation agencies, and private and public employment sectors. Transitional programming emphasizes preparation for adult living and work, and is based on a model embodying five basic concepts: (a) programming at the secondary, special education level; (b) substantial interagency cooperation throughout the process; (c) extensive consumer input to the process; (d) individualized program planning; and (e) alternative vocational outcomes.

The provision of a functional curriculum oriented toward a work environment is an essential component of this approach to special education programming. Similarly, an integrated school environment where individuals with disabilities pacticipate in activities with all students is equally critical to movement into integrated work environments. Community service delivery is a major step toward moving special education students from school to work environments. With increased emphasis on requirements for more education in the future, community-based services will be even more critical and will create a need for cooperative programs among employers, public schools and rehabilitation agencies.

First, there will be a need for considerable interagency cooperation among school, rehabilitation, adult day programs, vocational-technical programs and other community service agencies. Such cooperative programming permits the development of a sound transitional model permitting participation by students with different types of disabilities in multiple work-related options. Consumer input requires that parents and students participate actively in decisions about services and programs. Heretofore, many parents have expressed concerns that integrated work settings were not in the best interest of their children as they moved out of the school setting. Transition planning must include input from the student/worker and parents to alleviate these concerns.

The third component of effective transition programming is the individualized program plan that formalizes the responsibilities of all parties for the development of transitional worksites, provision of primary and support services, development of evaluative criteria, and determination of funding assurances. The development of a series of transitional work sites is an important ingredient of a transition program model, and community cooperation is necessary to assure that the approach works over time. A variety of vocational outcomes, the fourth component, must be developed within any transition model, and must include outcomes such as competitive employment, mobile work crews, enclaves, specialized sheltered work, and supported employment.

### *Disability Management in the Workplace*

Disability management programs involve (a) creation of corporate policies on disability and its prevention, (b) education of workers and supervisors, (c) identification of critical decision points in company disability management strategies, (d) provision of ongoing medical monitoring and management, and (e) provision of an effective return-to-work program for injured workers. A key to success is early intervention, as much evidence confirms the longer an injured worker waits to return to work, the chances of doing so decrease significantly.

Backer (1986) suggests that VR agencies, historically, have been slow to respond to changing external conditions. Their stability of operation has been a virtue in some ways, a by-product of a system that has enjoyed long-standing funding and political support, and that has less of its energies consumed by responding to fads or to capricious threats to survival from the outside. At the same time, VR agencies have recently been challenged by private rehabilitation agencies.

Despite the competition between public and private rehabilitation interests, Backer (1986) believes there are opportunities for collaboration between employers and public rehabilitation agencies. The public sector is starting to move in this direction through such actions as the call by the National Council on the Handicapped in 1984 for more private sector involvement, and the recent formation of an employer committee by the Office of Special Education and Rehabilitative Services.

Among the most promising examples of cooperation between public and private interests are partnerships now emerging between corporations and rehabilitation organizations in the intersection between disability and health promotion. For instance, the Washington Business Group on Health and the National Rehabilitation Hospital have formed the Institute on Rehabilitation and Disability Management, a partnership that has the benefit of long-standing leadership in the corporate health promotion field. This institute is examining innovative ways for rehabilitation professionals to work with the business community.

The Institute for Rehabilitation and Disability Management (Schwartz, 1986a) recently conducted a national survey of 400 major corporations. The survey collected information on corporate rehabilitation and disability management activities. One hundred and eighty-one companies, representing a wide range of geographic locations and many major U. S. employers, responded to the survey. Significant findings of the survey included the following: (a) 65% reimburse for rehabilitation services in community hospitals, while 61% reimburse for rehabilitation services in rehabilitation specialty hospitals; (b) 72% reimburse for out-patient rehabilitation services; (c) 81% reimburse for physical therapy; (d) 53% reimburse for home-based rehabilitation services; (e) 28% reimburse for VR services; (f) 40% have developed case management programs; (g) the most commonly occurring short-term disabilities involved were musculoskeletal problems, follow-up to surgical procedures, respiratory problems, heart disease, pain, psychiatric disability, and substance abuse; (h) 38% have designated someone with their company responsible for coordinating and managing disability benefits; (i) only 4% employ full-time rehabilitation counselors to work with employees with disabilities; and (j) only 15% have mandatory rehabilitation provisions within their long-term disability policies.

These results suggest that the relationship between state VR agencies and private employers could be strengthened. For example, state agencies in New York, Georgia, Michigan, Minnesota and Virginia have worked closely with business and industry to implement special programs to enhance the return to work of people who are chronically ill, injured or disabled. Additional public policy research is needed to explore and clarify the role of state VR agencies vis-a-vis employer-based programs. A similar public policy issue relates

to the lack of clarity between the role of state VR agencies, private sector rehabilitation firms, and proprietary rehabilitation services.

### *Rehabilitation Engineering*

Many technological innovations have become available to increase employment opportunities for workers with disabilities. For example, the development of robots has created an interest in applications to assist people with disabilities. Several of these innovations were highlighted in an issue of the Rehab Brief (1987): (a) a computer-operated arm enabling a person to pour liquids and drink, eat, draw or paint, light a lamp, open cupboard doors and obtain objects from shelves, turn pages in a book, use a standard dial phone, shave with an electric razor, play games, and use an electric range to heat water; and (b) a wheelchair mounted robot arm that permits the individual to play chess, sandpaper model ships, drill holes in electronic printed circuit boards, and solder components on the circuit boards. Such products, although subject to the usual marketplace factors of profitability, given relatively small markets and high costs, could enable many severely disabled persons to pursue active careers heretofore thought improbable if not impossible.

### *Job Matching*

Computer-based occupational information systems for vocational planning and job matching are becoming important tools for rehabilitation professionals. These systems have the capacity to list a variety of vocational goals based on the U. S. Department of Labor occupational coding system. Given inputs of worker trait profiles, the systems allow for rapid searches of data files to generate work groups requiring such traits. These systems permit occupational exploration across the many jobs available in the U. S. economy so that the individual's perspective of the world of work can be broadened beyond his/her own experience and knowledge base. Several commercial systems using terminals with access to mainframe computers or microcomputers are available.

## Partnerships

Disability, in reality, is a matter of perception. Being unable to participate is what motivated the founding in 1982 of the National Organization on Disability, a private group dedicated to expanding

mainstream participation of citizens with disabilities. Volunteers, including both people with and without disabilities, work together to develop goals and carry out programs. Such partnerships make public officials and private employers aware that they may be depriving themselves of valuable human resources by underutilizing workers with disabilities. These groups seek to foster more acceptance of disability as part of the human condition. In more practical terms, partnerships promote campaigns to make day-to-day amenities more accessible to people with disabilities through modifications and design of housing, workplaces and tranportation systems (Mobil Corporation, 1986).

Cooperation through partnerships will be an important key to future workplace participation for persons with disabilities. The stage has been set by rehabilitation legislation, most notably the Rehabilitation Act of 1973 as amended. Federal initiatives, e.g., Projects with Industry, developed through this legislation and within the Rehabilitation Services Administration, have resulted in creation of new partnerships encouraging the placement of persons with disabilities in competitive employment. Other legislative efforts such as the Targeted Jobs Tax Credits have also encouraged partnerships between employers and organizations serving people with disabilities.

### *Projects with Industry*

Projects with Industry (PWI's) were designed to fully capitalize on the available legislation and the partnerships inherent in the law. PWI's are projects designed to prepare people with disabilities for competitive employment and to conduct job development and placement activities to ensure employment. PWI grants have been made to a variety of organizations including trade associations, rehabilitation facilities and labor unions. Although generally considered to be successful, recommendations have been made to meet additional needs, including (1) more PWI's in business and industry; (2) increased technical assistance to PWI's from federal and state agencies; (3) greater participation from business and industry through on-site training leading to placement; and (4) co-location of VR counseling and PWI placement personnel to improve cooperation and communications. The success of the PWI program is predicated on extensive interaction with private sector employers, and recent federal initiatives have encouraged the private sector to assume a

greater share of the responsibility for social programs (Pretz, Daggett & Corwin, 1982).

### *Job Training Partnership Act*

The Job Training Partnership Act (JTPA) was developed to prepare youth and unskilled adults for entry into the labor force, and to provide job training to economically disadvantaged persons facing barriers to employment (Public Law 97-300). The JTPA philosophy stresses the need for private sector employment and training programs. JTPA funded programs operate at the local level and can be used by rehabilitation organizations to increase the availability of training and employment opportunities for their clients. Although considerable use of JTPA programs is being made by some rehabilitation agencies, more coordination by VR and JTPA staff could result in greater use of this resource.

### *Waivers*

A significant change in the rehabilitation community involves the use of waivers that allow for increased flexibility in the use of federal funds, or in the interpretation of federal regulations pertaining to community-based employment services. Since 1981, 48 states have submitted over 100 waivers in order to serve persons who otherwise would have entered or remained in nursing homes or institutions. Many of these waivers have been for persons with developmental disabilities or chronic mental illness. For example, in Wisconsin, the Community Integration Program (CIP) received approval from the Federal Health Care Finance Authority to use Medicaid funds for case management and habilitation services, the latter including supportive home care, daily living skills training, day services, pre-vocational services and supported employment (Staff, 1986, October). These waivers, coupled with VR services, can expand employment-related services in the community to populations considered in the past to have limited employment potential.

### *Job Creation*

The use of private venture capital and public employment funds to offer training and long-term support for individuals with severe disabilities capitalizes on the expertise available in rehabilitation programs. This approach relies on private sector provision of work sites and real work possibilities. An example of such a venture has

been a program operated between the Wisconsin Community Development Finance Authority (WCDFA) and the VR agency in that state (Wisconsin Community Development Finance Authority, 1986). Designed for severely disabled persons who have resided in institutions or community-based facilities, the project involves demonstration programs to assess the capacity of private, for-profit businesses to provide jobs. The WCDFA solicits proposals from community agencies such as economic development corporations for business start-ups, spin-offs or expansions. Providing venture capital to businesses that employ individuals with disabilities is a creative notion encouraging partnerships.

### *Unions*

In 1979, the AFL-CIO adopted a policy addressing some of the problems of workers with disabilities. The union asserted that its goals are a job for every American able and willing to work, including millions of people with disabilities. As a result, the AFL-CIO urged its affiliated unions to take steps to increase employment opportunities for workers with disabilities, including (a) changes in collective bargaining agreements to protect union members with disabilities from being denied continued employment, (b) support of efforts to carry out the intent of Section 503 of the Rehabilitaion Act of 1973, (c) support of initiatives to eliminate architectural barriers, and (d) participation in programs to rehabilitate and employ workers with disabilities.

Organized labor also focuses on prevention by setting up labor-management occupational safety and health committees to eliminate hazardous working conditions. Unions work with employers to identify easy, low-cost job modifications that not only accommodate workers with disabilities, but also assure a more free and safe flow into and within a workplace. It is believed that the greater the awareness, involvement, and experience of unions with rehabilitation, the greater the assistance they will be able to provide their disabled members and dependents. Also, the reduced health and disability insurance costs and lower disability pension costs from rehabilitation and disability management can help protect union insurance funds.

Many state rehabilitation agencies could develop fertile relationships with labor unions. Unions, as well as corporate management, can learn rehabilitative techniques from state agency professionals. As

Galvin (1987) has suggested, "Revitalization of rehabilitation in the last years of this century will be more influenced by the creativity and energy in Albany, Austin, and Sacramento" than to the historical leadership provided by the federal government.

### *Business Accounts System*

One example of a creative approach to marketing rehabilitation services to business and labor has been developed by the West Virginia Division of Vocational Rehabilitation, in cooperation with the West Virginia Rehabilitation Research and Training Center. A business-labor unit was created within the agency as a resource center for both business and workers to find ways to manage the problems of disability. The main concept of the West Virginia model is to expand the services of the agency to business and labor organizations in the form of (a) individual consultation on prevention of disability through wellness and employee assistance programs, and early detection; (b) early rehabilitation intervention in situations where employees with disabilities may return to the company; and (c) information programs such as seminars, workshops, and training sessions on various rehabilitation topics. Through this unit, injured or ill workers and their family members obtain personal and vocational counseling, information about return-to-work options, vocational assessment, and communication assistance with various public agencies, employers and unions.

State rehabilitation agencies have the potential to provide rehabilitation support, especially to firms that are not large enough to operate sophisticated employee benefit programs. Moriarty (1986) has suggested that state agencies develop and maintain a business account system (BAS) through which VR programs provide education, technical assistance and consultation to employers. Moriarty's concept is for the agencies to accept business firms as clients as well as continuing to accept disabled individuals as clients. The goals of BAS are to (a) create in businesses an environment hospitable to employment of persons with disabilities; (b) make rehabilitation a meaningful component in company human resource management; (c) assist employers to retain or return employees with disabilities to work as soon as feasible; (d) intervene with "at risk" employees to prevent onset of disability from forcing a person in to severance from the work force; and (e) as a result of the above assistance, generally better equip the company to receive placements of persons rehabilitated through the state-federal program.

BAS treats the company as the client. Procedures analogous to casework are followed with companies applying to open an account, the application being evaluated on substantiality of need and the expectation that VR's corporate services could enhance the company's ability to actively manage disability. A cooperative plan is then developed and customized to the individual company's needs. The plan specifies the type of services VR would provide as well as the nature, type and extent of corporate resources that would be made available. There would also be an agreement on closure time. Among VR corporate services could be (a) architectural barrier consultation, (b) worksite accommodation consultation, (c) job analysis, (d) return of the injured worker, (e) second injury certification, (f) maintenance of workers with disabilities, (g) 503-504 consultation, (h) consultation on employee assistance programming, (i) on-the-job training, (j) sensitivity and awareness training, (k) retraining, (l) work hardening, (m) community resources and coordination with family members' services and wellness interventions, (n) placement, and (o) health and disability related cost control.

***Removal of Barriers***

Prejudice, not physical limitation, is often the true source of the lower education, employment, and income levels of those who are disabled. Disability thus emerges as a civil rights issue as well as a health issue with many parallels between persons who are disabled and other oppressed minority groups.

Initial encounters between people with and without disabilities often create confusion, ambiguity and fear, causing those who are not disabled to stay away in order to avoid discomfort. Thus education and information regarding disabilities must become an important function of rehabilitation and related programs.

For persons with disabilities, many attitudinal and structural barriers can be dealt with early in employment. The initial period is the most critical in terms of continued employment, and supervisors may need to adapt or revise orientation procedures for persons with disabilities and their co-workers. Inaccesible transportation, inaccessible parking, lack of TDD message relays, lack of reasonable housing, lack of affordable attendant care and inadequate child-care may all serve

as structural barriers requiring additional program development to permit the person with a disability to work.

## Conclusions and Implications

Providing a review of a number of programs and services that can expand the horizons for people with disabilities should serve to assist in program development for rehabilitation organizations into the future. This unit has centered on discussions of four primary issues: (a) the changing vocational rehabilitation service clientele, (b) public policies on disability, (c) service program initiatives, and (d) partnerships. It is nothing new to rehabilitation professionals that the service population is largely composed of individuals with severe disabilities requiring multiple services to become employable. With the emphasis on serving those with severe disabilities has been a concurrent surge of disability legislation and national disability policies encompassing employment, education, independent living, and a host of other significant issues. These policies provide the underpinning for the employability and employment goals for our nation's workers with disabilities.

Additionally, new service initiatives in job accommodations and disability management at the worksite were described to illustrate ways to expand the potential of workers with disabilities. Finally, partnerships with employers, unions and other significant groups in the employment environment have been shared to demonstrate how such collaborative enterprises can expand employment horizons for people with disabilities.

As reported in the unit, many of the new initiatives are directed toward the environment rather than people with disabilities. We have seen a transition from services oriented toward rehabilitation of the person to rehabilitation of the environment. The clear message is for changes and action on behalf of people with disabilities rather than to them. Services providers will be required to rethink the roles that have traditionally been used in vocational rehabilitation agencies, and to shape these roles so that considerably more effort can be directed to the employment environment. This will have to be done without diluting current services for the employability development of people with disabilities.

## Unit Five
## Implications for People with Disabilities and Vocational Rehabilitation Programs

**Objectives.** The objectives of this chapter are (a) to discuss how changing requirements of the workplace are likely to affect persons with disabilities; (b) to address issues that will have an impact on recipients of services and rehabilitation professionals in preparing individuals who are disabled for work in the future; (c) to stimulate thought for possible changes in vocational rehabilitation policies that could be advantageous in meeting the needs of individuals with disabilities; and (d) to develop awareness among rehabilitation professionals and employers of the importance of establishing integral working relationships with the private sector, including business, industry and labor.

**Overview.** This unit provides a discussion of the implications of the foregoing material for people with disabilities and vocational rehabilitation programs in relation to (a) future labor markets and the preparation for these markets; (b) system accessibility through revisions in eligibility determination; (c) needed changes in the clinical casework model; (d) psychosocial programming needs; (e) preparation of service providers; and (f) leadership.



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## Introduction

Numerous studies show that the U. S. is moving from a manufacturing to a service economy. It is predicted that most of the new jobs will be in the service sector with manufacturing remaining relatively stable. Trends indicate that the general population will become older, large industries will continue, but many small entrepreneurs will develop small businesses, qualifications for workers will rise significantly, and many workers will have several career changes during their working lives. Jobs will be plentiful; some even project a coming labor shortage. Although there will be sufficient employment opportunities, many of these jobs will not be lucrative in pay and other benefits, and people with disabilities will have to deal with these problems along with other workers.

The continued existence of VR as a viable program will depend to a large extent on the ability of the state-federal and related programs to adapt to a rapidly changing environment. It will be a challenge to provide evidence that individuals with disabilities need rehabilitation services in order to have the same opportunities as all citizens in society. As indicated throughout this document, jobs will change along with higher educational requirements and more career changes. Work schedules will see increased use of flex-time, work carried out in the home and more use of part-time employees. Without question, VR is a needed program; but it is also evident that those in policy and decision-making roles must look forward to the future and initiate plans to meet these changes to ensure the continuation of services to people with disabilities.

One thing we have learned from the past is that the future is not usually reached by giant steps, but by relatively small interrelated increments. Traditionally society has been reactive for the most part and changes come slowly. There are a multitude of forces that will shape the future. We have limited control and influence over many of these forces. Yet, we can exert the leadership within our own organizations and act assertively on behalf of people with disabilities and VR programs. With this in mind, the focus of this unit is on the implications that the future workplace has for people with disabilities, for vocational rehabilitation programs and for the private sector.

## Implications for People with Disabilities

### *Future Labor Markets*

Numerous studies show that the U. S. economy is moving from a manufacturing to a service economy. Norwood (1986) projected that (a) 9 of every 10 new jobs will be in the service sector; (b) 7 of 10 are currently in this sector; and (c) nearly 30 million jobs have been gained in services since 1969 with manufacturing holding the same number of jobs. One must keep in mind however, that the fastest growing employment fields, i.e., technical and computer-related jobs, are not necessarily the fastest growing in total number of jobs available. For example, the health care field will probably be one of the largest employment areas in the future due to the aging of the population and improved medical treatment resulting in greater longevity.

With the growth of computers, opportunities for employment of persons with disabilities have increased. There are many new jobs in technical fields with even more projected in the future. For example, a magazine article (Staff, September 22, 1986) featured a person who is quadriplegic using a mouth stick to operate a computer in his home, thus accessing the world; a boy who is deaf gaining valuable socialization through computer bulletin boards; a person with Lou Gehrig's disease who could only blink his eyes, communicating via computer with his family; a woman who is deaf and blind using a computer to earn a living proofreading Braille music, and socializing with hundreds on the computer bulletin boards; and an accountant with cerebral palsy who earns a living with a computer even though he is unable to write.

An individual who can use breath control to activate a switch or eye movement to control an optical switch can operate a computer. Already, many people, with or without disabilities, work from their homes using computers and then transmitting their work over a phone line to offices and other locations.

### *Preparation for Future Labor Markets*

Roger Semerad, Assistant Secretary for Employment and Training of the U. S. Department of Labor, has indicated that future jobs will strongly favor those workers with greater education, and that by the

year 2000 the labor market will show increases in professional and managerial jobs. He also sees a clear need for analytical and communication skills as well as technical training (Semerad, 1987).

The worker of tomorrow will have to be highly skilled and adaptable to change as frequent job changes are forecast. Workers of the future will be involved in continuing education, a major requirement for success when technology is evolving at a rapid rate. Samuel Ehrenhalt, the New York Commissioner of the U. S. Bureau of Labor Satistics reports: "You can't train now for the 21st century. What you can train for is to be ready, to develop your ability to learn, and to be flexible; knowledge is the most valuable tool of the trade." (Ehrenhalt, 1986, p. 12). Echoing this advice is David Birch, a career specialist at the Massachusetts Institute of Technology: "Don't expect job security. Most people will work for small businesses, not large corporations. You've got to assume (in the future) you'll have at least 15 to 20 jobs, 8 to 10 different employers and change careers 5 to 6 times." (Birch, 1986, p. 12).

Advances in robotics may save businesses millions of dollars and may be one answer the U. S. has to the competition of cheap labor overseas, but these changes will cost many unskilled and semi-skilled workers their jobs. Wassily Leontief (1986), a Nobel Prize winner directing the Institute for Economic Analysis at New York University, states that robots may wipe out 400,000 semi-skilled jobs by 1990 and nearly two million by the year 2000. These projections indicate that rehabilitation agencies will have to be flexible since their clients will need services at various intervals over extended time periods.

Since technological and other advances are radically altering the labor market, workers will need technical training to adequately prepare for employment. Statistical reports on the state-federal VR system suggest that in the past most placements have been in secondary labor market jobs, especially semi-skilled and unskilled jobs. This finding indicates that the traditional approach to vocational training needs to be re-examined. Since people can be expected to make multiple job changes in their working lives, it can be assumed that retraining will be essential. Knowledge, rather than physical capability, will rule much of the job market of the future. General literacy requirements expected by employers will continue to rise, and new high-tech jobs in the information and

communications industries will require high-skill levels achieved through training.

## Implications for Vocational Rehabilitation Programs

Since quantum leaps will not likely be taken into the future, small steps will be required to prepare for future programs and services. The picture of the workplace of the future already presented, along with other factors that are having an impact on VR policy, provide some clues as to what needs to be done.

### *System Accessibility: Revisions in Eligibility Determination*

One of the first items that should be assessed is the concept of eligibility. Undoubtedly, many of the requirements for eligibility have become outdated since the changes in the Act in 1943. The concepts of *vocational handicap* and *reasonable expectation* may be inappropriate with the population served today, and may become even more problemmatic in the future.

The push experienced by VR in the past few years to become involved earlier with school age children to help assure effective transitions from school to work will certainly continue. Current eligibility criteria, however, make this possibility awkward.

Most workplaces are expected to require much less physical exertion in the future, indicating that individuals currrently found ineligible can be expected to be eligible. The same is expected in homebound employment which is brought about by technological advances.

The programmatic changes of recent years, e.g., VR's involvement in supported employment, have been created by consumer and advocate initiatives. Changes in legitimate outcomes obviously have an effect on criteria for eligibility. Can it be assumed that an individual may be eligible in the future if they have potential for any improvement in vocational capabilities? Further, can it be assumed that independent living may soon become a legitimate VR outcome?

Since change affects not only programs and services but the population served, eligibility criteria must become more easily and uniformly applied and the system must become more accessible. The time may come when services are made available to any person with a disability, whatever services are necessary to improve their

vocational capabilities will be provided, and clients will exit the system when maximum gains have been made.

### *Clinical Casework Model*

A second factor to consider is the clinical casework model in the service delivery system. This process--where individuals enter the system, receive services and exit the system never to be seen again--should be reviewed. As an example, the workplace of the future will change rapidly, skill updating will be a common occurrence, and learning will be a lifelong experience. Most rehabilitation professionals recognize the fact that the present process does not work even today for a number of clients, e.g., persons with chronic mental illness need a rehabilitation system that is open so they can enter and exit as necessary, depending on the recurrence of symptoms.

### *Psychosocial Programming*

One of the most important rehabilitation services in the future may be psychosocial counseling. An increase in homebound employment may create a need for counseling services to deal with (a) motivational problems that may develop for workers who are isolated from other workers; (b) depression and loneliness caused by isolation; and (c) increased substance abuse. If, as the predictions suggest, there are more permanently dislocated, unemployed workers, there will be a need for counseling to cope with unemployment.

### *Preparation of Service Providers*

Because of the various pressures for expanding the scope of the VR program, e.g., holistic rehabilitation, VR will need to rethink personnel preparation for a changed service delivery system. VR staff and outside service providers must be able to deal with the varied problems presented by persons with very severe disabilities who are working towards diverse personal and vocational goals.

Of great importance will be the ability to function as an effective team member. The days of the lone ranger counselor are long past. In the future counselors will coordinate a team of professionals to help the client achieve desired outcomes. This team will not only involve the counselor, client, and service providers, but the family as

well. More than ever before, the counselor and client team approach will be necessary in order to determine mutually agreeable goals and actions. Without question another important member of the future rehabilitation team will be the business community. Counselors may actually be placed in business settings in cooperative agreements between VR and employers, and as a result, will need some business background in order to understand the problems faced by business and industry.

Staff training will be a high priority for future VR administrators. Pre-employment training programs must be designed to fit the specific needs of the agencies. Technical skills in areas such as engineering, medical aspects of disability, vocational evaluation, vocational counseling, work adjustment services, psychosocial counseling, independent living, job coaching, and job placement must be gained in a pre-employment setting. In addition to the technical areas, staff will need pre-employment training in interpersonal skills, team building, negotiation, resource utilization, communication, computer literacy, job market analysis, and technology applications for persons with disabilities.

Staff development will increasingly become an essential part of VR. Sufficient time must be built into the system to allow for the ongoing staff training. If the workplace is everchanging as predicted and the medical and technological advances continue, staff must continually update their knowledge in order to provide adequate service to consumers.

### *Leadership*

VR agencies must continue to serve as leaders in the field of rehabilitation and habilitation. First, VR must become an even stronger advocate for people with disabilities. People with disabilities can expect only slightly easier access in the future than they have enjoyed in the past. Cooperation, support and promotion of advocacy groups will be of substantial benefit to VR since consumer groups have significant influence on legislation and funding. VR must become even more proactive in advocating for funding. As available funds are reduced, there is increased competition for them; therefore, VR will need support, including that of consumer groups, in order to have an impact on federal, state and local budgets. New and different methods of demonstrating the value of VR programs to funding sources must be pursued. For

example, cost studies documenting how independent living services make it possible for persons to live in less costly housing environments and at the same time receive less in total outside funding support are needed. It should also be possible to demontrate the savings and enhanced life styles for supported employment.

VR may also find funding possibilities outside public sources if a system is designed to meet the social problems and needs of other organizations. Further, new methods to market VR must be found to facilitate cooperation with business and industry. Working with the private sector, the needs of the workplace can be met through referral of trained employees. Labor market projections indicate that most people will work for small businesses that will not have the capital necessary to meet their employees' rehabilitation needs. There will also be a place for VR in large corporations since it will make business sense for them to contract with VR for services they need for employees who become disabled. Keeping people in the work force may be as important as getting them there.

## Conclusions and Implications

We can see from this unit that changes in the labor market and clientele, coupled with changing philosophies of rehabilitation and the treatment of people with disabilities, have resulted in the need to carefully plan for the future. The unit has pointed out how people with disabilities should consider the changes, especially by calling attention to the expanding service sector and the application of technology to employment problems. Although many other areas could have been addressed, these were selected as representative of the considerations that should be addressed.

The unit calls for changes in the state-federal vocational rehabilitation program, again to accommodate projected changes in clientele and labor markets. Although this system has enjoyed success over the years, many developments call for a streamlined service delivery system, especially in determining employability. The ability to predict vocational potential has always been difficult. However, with technology and medical advances creating untold opportunities for people with severe disabilities to pursue new jobs, such predictions seem to be even more problemmatic. Therefore, a review of eligibility criteria seems a timely recommendation. Also, the rapid pace of change calls attention to the need to evaluate the

efficacy of the referral-services-placement-closure approach to rehabilitation. Many would welcome a more flexible service delivery model that would allow for easier re-entry as well as initial entry.

The process of preparing vocational rehabilitation professionals is another area in which change is needed. Although many programs are actively involved in preparing specialists for work with persons with severe disabilities, there continues to be a need to devote greater attention to how rehabilitation professionals can be prepared to direct more of their time and energies to the employment environment. This unit identified several areas where rehabilitation specialists can serve employers in order to serve more workers with disabilities, e.g., return to work consultation on mid-career disabilities. This may not require a change in basic skills, but a reorientation in how these basic skills can be applied toward problems in the environment.

Finally, the unit concluded with a call for leadership in redirecting services and initiatives to meet the demands of the future. More than ever in the past this leadership must be a coalition among vocational rehabilitation professionals in public and private sectors and workers with disabilities and their advocates. The leadership among workers with disabilities has never been so active nor so effective. A shift from leadership by rehabilitation professionals to leadership by disability activists has taken place over the past twenty years, and never has more legislation and public policy been developed and implemented than during this era. Now is the time to capitalize on the potential of collaborative action by consumers and professionals.

## Unit Six
## Recommendations

The Prime Study Group was in agreement that the state-federal rehabilitation program of the future can strengthen its service delivery system, improve the quality of its services to clients with severe disabilities, and undergird its partnership with business and industry through the development and implementation of the following recommendations.

1. All university and college rehabilitation counseling training programs should include business-related courses in core curriculum requirements on topics such as the management of disability, job placement and personnel management.

2. University and college rehabilitation counseling training programs should provide students with more exposure to business and industry. This can be accomplished by using employers as guest lecturers, brief institutes, tours, student projects and the use of contemporary business literature as required reading.

3. Well-designed rehabilitation counseling internships under the supervision of qualified rehabilitation specialists should be conducted in corporate, industrial, federal and union settings.

4. Rehabilitation professionals should be prepared to serve as consultants, change agents, and technical assistants in the process of organizational development. In this role the rehabilitation professional can have an impact on policies and procedures affecting employees with disabilities.

5. The Rehabilitation Services Administration (RSA) should provide funds to increase staffing in state rehabilitation agencies for rehabilitation engineers to serve as consultants to counselors, clients and prospective employers. Such specialists can assist in resolving on-the-job design problems that interfere with or prevent a client from obtaining employment. They can also assist in finding solutions for company employees who have work restrictions.

6. Additional rehabilitation programs should be funded to train a cadre of rehabilitation engineers.

7. Significant increases in RSA funding to provide for the purchase or lease of special equipment and assistive devices required for job accommodations are required to place clients with severe disabilities in competitive employment.

8. RSA should promote supported employment programs through increased funding and new incentives for obtaining the participation and commitment from the private sector to employ VR clients who are severely and multiply disabled.

9. All state rehabilitation agencies should ensure that agency counselors, placement specialists, evaluators and administrators are well versed in the interpretation and application of the reasonable accommodation concept in the work setting.

10. Agency administrators, counselors and placement specialists should become knowledgeable about new options for homebound employment opportunities resulting from advanced technology.

11. Every effort should be made to assure that VR counselors have a working knowledge of the Rehabilitation Act of 1973, as amended, and various regulatory requirements as defined in

directives and regulations issued by federal regulatory and funding agencies.

12. State agencies should make sure that VR counselors understand their roles and responsibilities as consultants in assisting employers in complying with affirmative action requirements to employ and advance workers with disabilities.

13. Rehabilitation counselors and administrators should develop the knowledge and competencies required to serve as consultants to industry in solving individual disability-related problems. Consultants are needed to (a) anticipate the impact of specific impairments on productivity and placement, (b) utilize assistive devices to reduce hazards of specific jobs, (c) suggest techniques required to modify existing architectural barriers, and (d) redesign jobs to accommodate physical restrictions.

14. The National Rehabilitation Association and state vocational rehabilitation administrators should recommend that an additional amendment be made to the Rehabilitation Act of 1973 to allow citizens with disabilities the same civil rights currently recognized under Title VI of the Civil Rights Act of 1964.

15. The National Rehabilitation Association, the Rehabilitation Services Administration and disability advocacy organizations should recommend rehabilitation legislation to Congress to permit rehabilitation counselors to serve disadvantaged youths who are severely handicapped at the time they enter middle school, particularly to provide rehabilitation services and to develop individual development plans with exposure to career options.

16. State vocational rehabilitation agencies should be encouraged to develop organizational structures to maximize use of their limited funds. According to the evidence available, this can best be achieved if all state VR agencies are structured as separate commissions and headed by a commissioner reporting directly to the governor. This arrangement could significantly reduce delays in services to clients and improve the overall efficiency of the rehabilitation service delivery system.

17. The National Rehabilitation Association should develop and distribute to all state agency administrators a position paper on salary structures of rehabilitation counselors, administrators and support personnel. The paper should include salary data obtained from the private sector, and could be used by agency administrators to prevent significant erosion in the number of personnel who would otherwise accept employment in the private sector because of significant salary differentials between private and public employment.

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